

Rubin, B.K. "Exposure of Children with Cystic Fibrosis to Environmental Tobacco Smoke" The New England Journal of Medicine 323(12):782-788, 1990.

ABSTRACT: Background - In children, passive exposure to environmental tobacco smoke has been associated with growth suppression and an increased frequency of respiratory tract infections. On the assumption that this association would be more pronounced in children with chronic pulmonary disease, we examined the growth, nutritional status, lung function, and clinical condition of children with cystic fibrosis in relation to their exposure to environmental tobacco smoke. Methods - We studied 43 children (age, 6 to 11 years) on entry to a summer camp and then again after two weeks in this smoke-free environment. Twenty-four of the children (56 percent) came from homes with smokers. Results - There appeared to be a dose-dependent relation between the estimate of smoke exposure (cigarettes smoked per day in the home) and overall severity of disease, as assessed by the age-adjusted rate of hospital admissions ($r = 0.58$), peak expiratory flow rate ($r = -0.39$), and measures of growth and nutrition, including weight percentile ($r = -0.37$), height percentile ($r = -0.44$), midarm circumference ($r = -0.42$), and triceps skin-fold thickness ($r = -0.31$). These effects were most evident in the girls. When only the 24 children from homes with smokers were analyzed, however, the dose-dependent relation was present only for the number of hospital admissions and for height. Among the children with good lung function ($n = 21$) or with normal weight for height ($n = 27$) at the start of camp, those who had been exposed to tobacco smoke gained significantly more weight during the two weeks of camp than did the children from smoke-free homes. Conclusions - These data suggest that passive exposure to tobacco smoke adversely affects the growth and health of children with cystic fibrosis, although the possibility cannot be ruled out that social, economic, or other factors determined both the smoking status of the household and the nutritional status of the children.

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